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AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
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EXAMINER

NGUYEN, MINH T

ART UNIT PAPER NUMBER

2816

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/921,022

Applicant(s)

HUMPHREY, GUY HARLAN

Examiner

Minh Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 12-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 12-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendment filed on 1/26/04 has been received and entered. Claims 1-7 and 12-21 are pending. The amendment and argument presented therein overcome the previous objections and rejections, and therefore, are withdrawn. New grounds of rejections necessitated by the amendment are set forth below. This action is FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4, 7, 12, 14-15 and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,747,854, issued to Gotou.

As per claim 3, Gotou discloses an apparatus (Fig. 33) for reducing the slew rate of transition edges of a digital signal on a node (the intersection of the drains of P2 and N2 or P1 and N1) of an integrated circuit, comprising:

a first switchably conductive device (N1) characterized by a first threshold voltage (column 19, table 1, N1=0.5 volts) of a given polarity (the positive voltage which starts to turn ON N1), connected between the node (the intersection as shown) and a voltage source (5V and GND), a control input (gate of N1) receives a driving signal (at the gate) to turn ON (when the

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driving voltage is greater than or equal to the first threshold voltage) or to turn OFF (when the driving voltage is less than the first threshold voltage); and

a second switchably conductive device (N2) independent from the first switchably conductive device (N1) (the driving signal independently controls the gates of N1 and N2) characterized by a second threshold voltage (column 19, table 1, $N2=1$ volts) of the given polarity (thresholds of both N1 and N2 are positive) which is greater than the first threshold voltage (compare 1 volts and 0.5 volts), connected between the node (the intersection as shown) and the voltage source (5V and GND), a control input (gate of N2) receives the driving signal (at the gate) to turn ON (when the driving voltage is greater than or equal the second threshold voltage) or to turn OFF (when the driving voltage is less than the second threshold voltage).

As per claim 4, N1 and N2 meet the recited limitation.

As per claim 1, this claim is merely a method to operate an apparatus having the structure discussed in claim 3 above, since Gotou teaches the circuit, he inherently teaches the method.

As per claim 7, this claim is rejected for the same reasons noted in claim 1.

As per claim 14, Gotou discloses an apparatus (Fig. 33) for reducing the slew rate of transition edges of a digital signal on a node (the intersection of the drains of P2 and N2 or P1 and N1) of an integrated circuit, comprising:

a first switchably conductive device (P1) characterized by a first threshold voltage (column 19, table 1, $P1=-0.5$ volts) of a given polarity (the negative voltage which starts to turn ON P1), connected between the node (the intersection as shown) and a voltage source (5V and GND), a control input (gate of P1) receives a driving signal (at the gate) to turn ON (when the

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driving voltage is less than or equal to the first threshold voltage) or to turn OFF (when the driving voltage is greater than the first threshold voltage); and

a second switchably conductive device (P2) independent from the first switchably conductive device (P1) (the driving signal independently controls the gates of P1 and P2) characterized by a second threshold voltage (column 19, table 1, P2=-1 volts) of the given polarity (thresholds of both P1 and P2 are negative) which is less than the first threshold voltage (compare -1 volts and -0.5 volts), connected between the node (the intersection as shown) and the voltage source (5V and GND), a control input (gate of P2) receives the driving signal (at the gate) to turn ON (when the driving voltage is less than or equal to the second threshold voltage) or to turn OFF (when the driving voltage is greater than the second threshold voltage).

As per claim 15, P1 and P2 meet the recited limitation.

As per claim 12, this claim is merely a method to operate an apparatus having the structure discussed in claim 14 above, since Gotou teaches the circuit, he inherently teaches the method.

As per claim 18, this claim is rejected for the same reasons noted in claim 12.

As per claims 19-21, these claims are rejected for the same reasons noted in claims 3, 1 and 7, respectively.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 5-6, 13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,747,854, issued to Gotou in view of US Patent No. 5,877,647, issued to Vajapey et al.

As per claim 5, Gotou teaches an apparatus (Fig. 33) for reducing the slew rate of a digital signal which comprises first and second switchably conductive devices having first and second threshold voltages as discussed in claim 3 above but he does not explicitly teach an apparatus which comprises one or more additional switchably conductive devices wherein each has different threshold voltage as called for in the claim.

Vajapey discloses an apparatus (Fig. 6) for controlling the slew rate of an output signal using switchably conductive devices N1 and N2 or P1 and P2, and in column 7, lines 1-5, he explicitly suggests another embodiment which has one or more additional switchably conductive devices to further control the slew rate of the digital signal at the node.

It would have been obvious to one skilled in the art at the time of the invention was made to add one or more switchably conductive devices to the Gotou circuit wherein each has different threshold voltage.

The motivation/suggestion for doing so would have been obvious for the reason discussed herein above, i.e., more control of the slew rate of the digital signal at the node of the Gotou circuit.

As to the functional limitation recited on lines 7-12 of the claim, the combination discussed herein above clearly functioned as recited.

As per claim 6, the combination clearly teaches each is a single FET.

As per claim 2, rejected for the same reasons and motivations noted in claim 5.

As per claims 13 and 16-17, the claims are rejected for the same reasons and motivations noted in claims 2 and 5-6, respectively.

Response to Arguments

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Nguyen whose telephone number is 571-272-1748. The examiner can normally be reached on Monday, Tuesday, Thursday, Friday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 3/15/04

Minh Nguyen
Primary Examiner
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